Low-Cost, High-Performance Hybrid Membranes for Redox Flow Batteries

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This SBIR project aims to develop low-cost, high performance hybrid polymeric PEMs for redox flow batteries (RFBs). Such membranes shall have high chemical stability in RFB electrolytes, high proton conductivity, low permeability of vanadium ions, along with high dimensional stability, high mechanical strength and durability, and lower cost than Nafion membranes. The Phase I work has demonstrated the concept feasibility. Future work will be focused on optimization of the processing and the membrane performance.